

CLAIMS:

1. A method of initiating a connection to a multi-mode mobile telecommunication device, the method comprising the step of sending a paging message to the mobile telecommunication device from a core network, the paging message specifying a preferred mobile telecommunication access network for the connection.
2. A method as claimed in claim 1, and comprising returning a paging response signal from the mobile telecommunication device to the core network over the preferred mobile access network, and subsequently setting up the connection over the preferred mobile telecommunication access network.
3. A method as claimed in claim 1, and comprising returning a paging response signal from the mobile telecommunication device to the core network over a mobile access network to which the device is currently listening, and subsequently setting up the connection over the preferred mobile telecommunication access network.
4. A method according to claim 1, wherein the step of sending a paging signal to the mobile telecommunication device comprises the step of transmitting a paging signal specifying the preferred mobile telecommunication access network for the connection over each of a plurality of networks to which the device may listen.
5. A method according to claim 1, wherein the connection is one of a facsimile connection, data connection, or multi-media connection.
6. A method according to claim 1, wherein the preferred mobile telecommunication access network for the connection is one of a GSM access network and a UMTS access network.
7. A paging control system for a multi-mode mobile telecommunication device, the system comprising:
input means for receiving a connection setup message corresponding to an new connection for the multi-mode mobile telecommunication device; and

means for determining from the connection setup message whether there is a preferred mobile telecommunication access network for the connection.

8. A paging control system as claimed in claim 7 and further comprising
5 transmission means for causing the transmission of a paging message corresponding to the connection setup message over respective paging channels of two or more mobile telecommunication access networks serving the multi-mode mobile telecommunication device, the paging message containing an indication of a preferred mobile telecommunication access network for the connection.

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9. A paging control system according to claim 7 or 8, the system being located in a Mobile Switching Centre of a core network serving a plurality of access networks.

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10. A Mobile Switching Centre (MSC) comprising a paging control system according to claim 7 or 8, the MSC forming part of a core network serving a plurality of access networks.

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11. An MSC comprising a paging control system according to claim 8, the MSC forming part of a core network serving a plurality of access networks, wherein the MSC is arranged to initiate a handover to the preferred network when a paging response is received from a mobile telecommunication device on a non-preferred network, and the preferred network is available.

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12. A Serving GPRS Support Node (SGSN) comprising a paging control system according to claim 7 or 8, the SGSN forming part of a core network serving a plurality of access networks.

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13. A Serving GPRS Support Node (SGSN) comprising a paging control system according to claim 8, the SGSN forming part of a core network serving a plurality of access networks, wherein the SGSN is arranged to initiate a handover to the preferred network when a paging response is received from a mobile telecommunication device on a non-preferred network, and the preferred network is available.

14. A multi-mode mobile telecommunication device comprising:
means for receiving a paging message initiating a connection, the paging message containing an indication of a preferred mobile telecommunication access network for the connection;

5 means for determining the preferred mobile telecommunication access network from the paging message; and

means for transmitting a paging response signal over the preferred mobile telecommunication access network.

10 15. A method of setting up a connection to a multi-mode mobile telecommunication device, the method comprising the steps of:

sending a paging request from a core network to the device via at least one access network;

receiving at the core network a paging response from the device via an access

15 network to whose paging channel(s) the device is currently listening;

determining whether that access network can support the connection; and

if it is determined that the access network to which the device is listening cannot support the connection, establishing a communication channel to the mobile telecommunication device over a second mobile access network that can support the
20 connection.

16. A method of completing an incoming or outgoing call to a multi-mode mobile telecommunication device when a pre-existing call is connected to the mobile telecommunication device, the method comprising the step of:

25 determining whether the mobile telecommunication access network over which the pre-existing call is established can support the new call.

17. A method as claimed in claim 16 and further comprising the step of:

30 if it is determined that the mobile telecommunication access network over which the pre-existing connection is established cannot support the new connection, transferring the pre-existing connection to a second mobile telecommunication access network that can support the new connection, and establishing the new connection over the second network.

18. A method of handling a connection to a multi-mode mobile telecommunication device, the method comprising the steps of:

5 setting up the connection over a first mobile telecommunication access network that can support the connection;

determining whether a second mobile telecommunication access network can support the connection; and

10 if it is determined that the second mobile telecommunication access network cannot support the connection, inhibiting handover of the connection to the second mobile telecommunication access network.

19. A method according to claim 18, wherein said step of inhibiting a potential handover of the connection to the second mobile telecommunication access network is initiated by a MSC/SGSN, which sends a blocking signal to the RNC/BSC of the
15 current access network

20. A Mobile Switching Centre (MSC) for use in a mobile telecommunication network, the MSC comprising:

20 means for receiving a connection setup message corresponding to an new connection for a mobile wireless device;

means for determining whether a pre-existing connection is connected to the mobile device; and

25 means for determining, if a pre-existing connection is connected to the mobile telecommunication device, whether the mobile telecommunication access network over which the pre-existing connection is established can support the new connection.

21. An MSC as claimed in claim 20 and comprising means for transferring the pre-existing connection to another mobile telecommunication access network that can support the new connection if it is determined that the mobile telecommunication access
30 network over which the pre-existing connection is established cannot support the new connection.

22. A Mobile Switching Centre (MSC) for use in a mobile telecommunication network, the MSC comprising:

means for setting up an new connection to a mobile telecommunication device over a first mobile telecommunication access network that can support the connection;

5 means for determining whether a second mobile telecommunication access network can support the connection; and

means for inhibiting hand-over of the connection to the second mobile telecommunication access network if it is determined that the second mobile telecommunication access network cannot support the connection.

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23. A method of initiating a connection from a telecommunication system to one of a set of two or more communication devices, the method comprising the step of sending a paging message to at least one of the set of devices from a core network of the system, the paging message specifying a preferred mobile telecommunication access network
15 for the connection.

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24. A method of establishing a connection to a device via a specific one of a plurality of domains defined in a mobile telecommunication system, and comprising sending paging messages via one or both of the other domains, the paging messages
20 identifying the preferred domain.

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